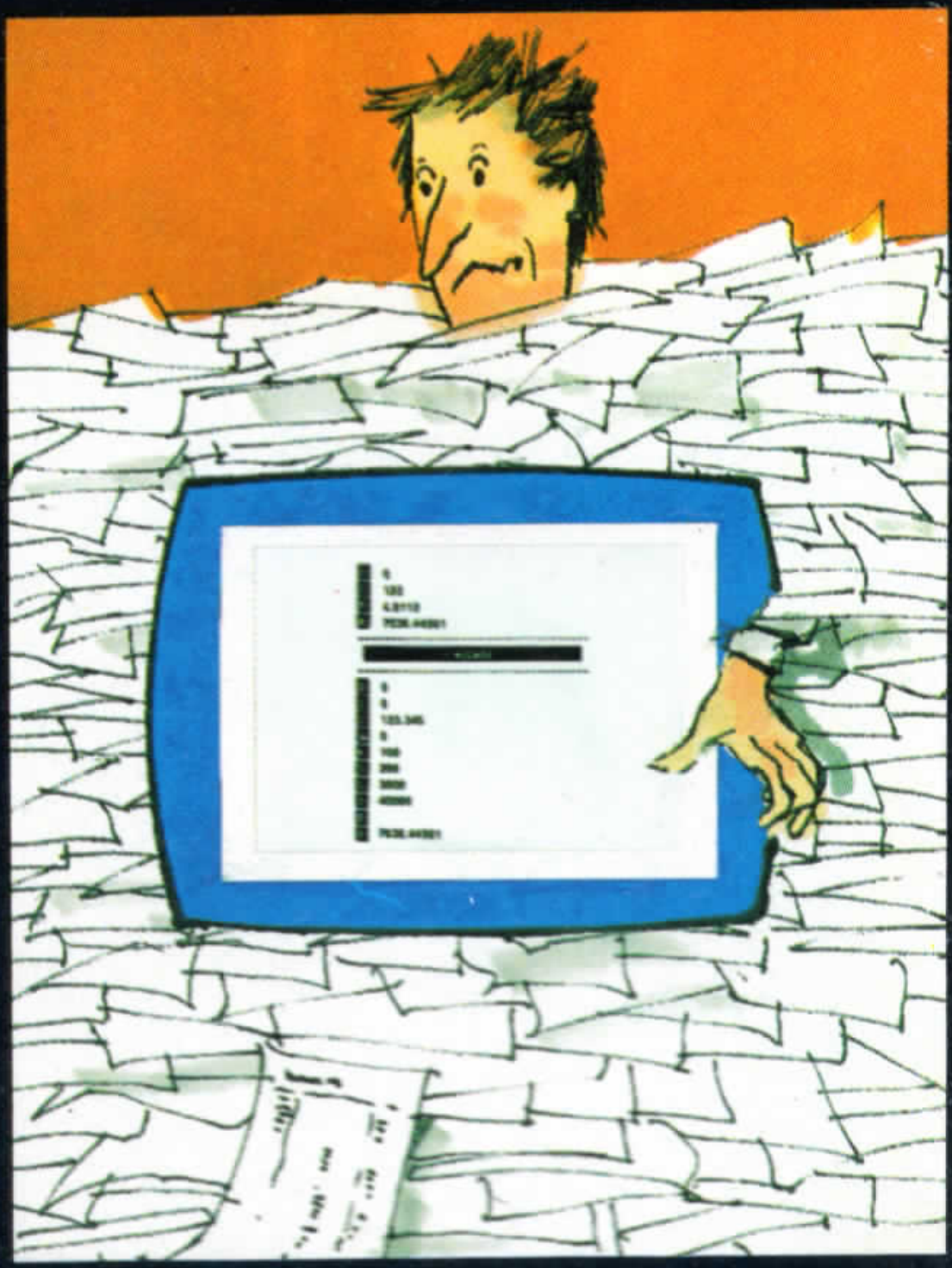
VisiCalc



THE VISIBLE CALCULATOR
FOR THE VIC!

ViCALC

by

Len Sasso

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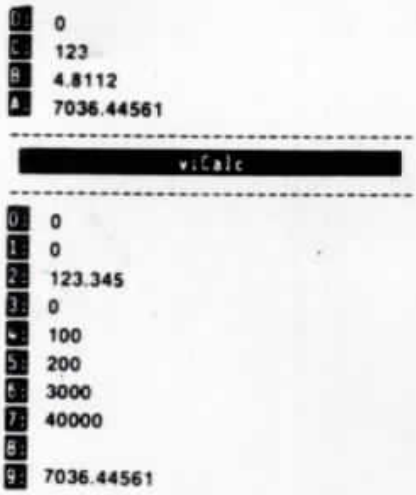
ViCalc, the viable Calculator, has 4 data registers and 10 memory registers, displayed on your TV screen like this:



GENERAL DESCRIPTION OF ViCalc

In **ViCalc,** constants, factors, and results are visible at all times. Therefore, complicated equations and multiple totals are easily calculated, and results quickly verified. Numbers, when entered, go automatically into Data Register A. Calculation results are produced in Data Register A, and can then be:

Used for more operations in the Data Registers.
Stored in a Memory Register.
Added, subtracted, multiplied or divided into a Memory Register with the result remaining in the Memory Register.
Exchanged with the contents of a Memory Register.
Cleared from the screen.

The Memory Registers can be cleared selectively or as a group.

This cassette contains four copies of this program, two on each side. If you have any loading problems, or if one of the copies gets damaged, then use one of the other copies. Before loading any program, please ensure that the heads of your cassette deck are clean and demagnetised.

TO ENTER DATA

When a number is entered in ViCalc, it always goes into Data Register A, the lowest register of the stacked Data Registers A, B, C, and D.
The keys used for data entry are:

OPERATIONS	KEY
Enter numerals	0 through 9
Enter the decimal point	.
To delete the last keystroke	DEL
To end data entry	RETURN

The second number entered also goes into A, and **automatically rolls** the first number up to Data Register B. End entry with the RETURN key or an OPERATION.

OPERATIONS

ViCalc performs five kinds of operations:

BINARY operations, which uses two numbers and leaves the result in A.
STACK operations, which manipulate the Data Registers. For example, numbers may be **rolled** through the Data Registers.
FUNCTIONs, which calculate with A and leave the result in A.
MEMORY operations, which perform arithmetic with A. Results are left in the selected Memory Register. Numbers can also be moved between A and the Memory Registers.
SETTING PRECISION, which displays register contents with from 0 to 9 decimal places.
FINANCIAL, which are special operations that perform compound interest calculations using the Data and Memory registers.

BINARY OPERATIONS

Binary operations use Registers B and A, clear B, **roll** the stack down once, and leave the result in A.

KEY PRESSED	OPERATION	RESULT
+	B+A	In A
-	B-A	In A
*	B times A	In A
/	B divided by A	In A
↑	A raised to the Bth power	In A
%	Percentage of A	B/100 times A in A
c	Change sign	A=-A

STACK OPERATIONS

Stack operations allow manipulation of data in the Data Registers, and help make **VICalc** a powerful computational tool.

KEY PRESSED	OPERATION	RESULT
CRSR UP	Rolls stack up once.	Contents of A go to B, B to C, C to D, D to A.
CRSR DOWN	Rolls stack down once.	Contents of A go to D, D to C, C to B, and E to A.
HOME	Clears A	Clears A. B rolls to A, C to B, and D to C.
CLR	Clears Data Registers.	Clears A, B, C, D, to zero.
X	Exchange A with B.	A goes to B, B to A.

NOTE: 1. CRSR UP is the screen "cursor up" key. CRSR DOWN is the screen "cursor down" key.

Press the SHIFT key to execute CRSR UP and CLR.

FUNCTIONS

Functions are executed by pressing the function keys on the right-hand side of the keyboard. They are labelled f1, f2, f3, f4, f5, f6, f7 and f8. Use the SHIFT key to get functions f2, f4, f6 and f8.

KEY PRESSED	OPERATION	RESULT
f1	A↑e	In A
f3	lnA	In A
f5	log (base) A	Log of A to the base value stored in Memory Register 9 is left in A.
f7	Square Root of A	In A
f2	Random (0)	In A If Memory 9<>0, then A = Random (0)*m9 + m8. This operation causes the data registers to roll up. m8 and m9 represent Memory Registers 8 and 9.
f4	sin(A)	Sine of angle measured in radians in A.
f6	cos(A)	Cosine of angle measured in radians in A.
f8	tan(A)	Tangent of angle measured in radians in A.

SETTING PRECISION

ViCalc calculates all results to the full nine-place precision of the computer. Setting precision changes the display only. To SET PRECISION to the number of places you desire, press p#, which is the letter "p" key followed by a number from 0 to 9, (represented here by the character "#"), for the number of places you desire.

PLEASE NOTE: ViCalc displays results to the mathematically correct significance for the precision selected. For example: the actual computed result 9.999785 will appear as follows:

SETTING	DISPLAY
p6	9.999785
p5	9.99979
p4	9.9998
p3	10.

Precision may be set at anytime for all data and memory registers, and the display will change to your setting.

MEMORY OPERATIONS

Every operation using a Memory Register is preceded by the keystrokes m#. Here, m is the letter "m" key, and the "#" represents a numeral 0 through 9, which chooses one of the ten Memory registers.

KEY PRESSED	OPERATION	RESULT
m**CLR**	Clears memory registers	Memories 0 through 9 set to zero.
m#=	m#+A	Content of A is duplicated in m#
m#r	A=m#	Content of m# is duplicated in A
m#+	m#+A	In m#
m#-	m#-A	In m#
m#*	m#*A	In m#
m#/	m#/A	In m#
m#x	Exchange m# with A	Content of m# moves to A and A to m#
m#c	Change sign	m#=-m#
m#**HOME**	Clear m#	Memory selected is cleared to zero

FINANCIAL OPERATIONS

Compound Interest Earnings (Savings) Tables and Amortization Tables are calculated with a single keystroke.

For COMPOUND INTEREST EARNINGS:

1. Enter beginning principal in B.
2. Enter the period interest rate in A. (Enter 6 for 6% yearly interest, for example).
3. Press key "i".

The Compound Interest Earnings (Savings) Table is displayed in Memory Registers 0 through 9. After computation, the values left in Data Registers are:

REGISTER	VALUE
C	Number of periods computed.
B	Next principal balance.
A	Interest rate.

Pressing "i" extends the table by computing the next 10 periods.

For AMORTIZATION:

1. Enter your beginning balance in C.
2. Enter the period interest rate in B.
3. Enter the period payment in A.
4. Press "a"

To compute a $10,000 note at 10% A.P.R. with monthly payments of $150:

Key in 10000 and press RETURN to enter principal.
10 and press RETURN to enter interest rate.
12 and press RETURN for enter number of months.
/ and press RETURN to calculate monthly interest.
150 and press RETURN to enter the monthly payments.
Press key a.

The Amortization Table is displayed in Memory Registers 0 through 9.

After computation, the values remaining in the Data Registers are:

REGISTERS	VALUE
D	Number of years computed.
C	Next Balance.
B	Interest rate.
A	Payment.

To calculate another Amortization Table, press key a for another 10 periods. Repeated calculations with a until you achieve a balance of 0 will show you the number of periods required to reach zero balance.